

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination / 303(d) Status
Norview Marina STP – VA0087611

TO: Jeremy Kazio

FROM: Jennifer V. Palmore, P.G.

DATE: November 9, 2012

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The Norview Marina is permitted to discharge to Broad Creek near Stingray Point, VA. The outfall will be located at rivermile 3-BRD000.40. Flow frequencies have been requested at this site for use in developing effluent limitations for the VPDES permit.

Broad Creek is tidally influenced at the discharge point. Flow frequencies cannot be determined for tidal waters; therefore, previous modeling or standard dilution ratios should be used to evaluate the effluent's impact on the water body. The Water Quality Standards designate Broad Creek as estuarine waters; therefore, saltwater criteria should be used.

During the 2010 305(b)/303(d) Water Quality Assessment, Broad Creek was assessed as a Category 5A water ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list)."). The applicable fact sheets are attached. The Recreation Use is impaired due to Enterococcus violations. The Aquatic Life Use is impaired because the mesohaline Rappahannock River estuary, which includes tidal Broad Creek, failed the Open Water summer 30-day mean dissolved oxygen criteria. In addition, Broad Creek had a NOAA ER-M screening-value exceedance for copper and zinc in sediment on 9/5/1997; this is considered a non-impairing observed effect. The Wildlife Use is fully supporting and the Fish Consumption Use was not assessed. The area is under a VDH shellfish harvest prohibition due to the presence of multiple dischargers; therefore the Shellfish Use is considered removed.

During the draft 2012 Assessment, Broad Creek was considered a Category 4A water ("Impaired or threatened for one or more designated uses but does not require a TMDL because the TMDL for specific pollutant(s) is complete and US EPA approved.") The applicable fact sheet is attached. The Aquatic Life Use is impaired for dissolved oxygen. Although the mesohaline Rappahannock River estuary, which includes tidal Broad Creek, met all assessed dissolved oxygen criteria, the segment is considered impaired due to EPA policy. In addition, Broad Creek had a NOAA ER-M screening-value exceedance for copper and zinc in sediment on 9/5/1997; this is considered a non-impairing observed effect. The Wildlife Use and Recreation Uses are fully supporting and the Fish Consumption Use was not assessed. As stated above, the area is under a VDH shellfish harvest prohibition due to the presence of multiple dischargers; therefore the Shellfish Use is considered removed.

Water quality data from monitoring station 3-BRD000.31 is attached. The station is located on Broad Creek at the end of Route 636, which is across the stream from Norview Marina.

Broad Creek has historically been considered a Tier 2 water because previous modeling determined that "the discharge of conventional pollutants from the six small STPs proposed to the creek have no calculatable (sic) effect on the dissolved oxygen of the creek. In fact, the models indicate that this will be

true to a least an aggregate flow of 1.0 MGD” (Phillips, 1992). However, review of local monitoring data from station 3-BRD000.31 shows that on two occasions dissolved oxygen values were at or only slightly above 5.0 mg/L. Due to this the stream should be considered Tier 1.

The Broad Creek Shellfish TMDL was approved by the EPA on 6/7/2006 and by the SWCB on 6/27/2007. The facility was not addressed in the TMDL because the portion of Broad Creek in which the marina is located is a prohibited zone and the Shellfish Use is considered to be removed.

Norview Marina was included in the Chesapeake Bay TMDL, which addressed dissolved oxygen, chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the mainstem Bay and its tidal tributaries. The TMDL was approved by the EPA on 12/29/2010. However, the discharge was mistakenly included in the aggregated total nitrogen, total phosphorus, and total suspended solids (TSS) wasteload allocations for non-significant wastewater dischargers in the Piankatank River mesohaline estuary (PIAMH) instead of in the Rappahannock River mesohaline segment (RRPMH). DEQ Central Office staff were made aware of the error and indicated that it is appropriate to issue these permits (attached email - Brockenbrough, 11/9/12). The nutrient allocations are administered through the Watershed Nutrient General Permit; the TSS allocations are considered aggregated and facilities with technology-based TSS limits are considered to be in conformance with the TMDL.

If you have any questions concerning this analysis, please let me know.